

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	GN Docket No. 09-47
Spectrum for Broadband)	GN Docket No. 09-137
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51
)	
)	NPB Public Notice #30

To: The Commission (filed electronically)

REPLY COMMENTS OF CTB GROUP, INC.
NPB Public Notice #30

1. CTB Group, Inc. ("CTB") hereby submits these Reply Comments in response to NPB Public Notice #30. CTB has participated actively in this proceeding.¹ In this final formal comment round prior to release of the Broadband Plan, CTB wishes to stress, as it has previously, that the rush to reallocate spectrum for wireless broadband services, which has received so much attention and comment from both private parties and Commission officials, must not lead to precipitous action which neglects important and currently known multi-frequency network technological advances -- advances that can significantly multiply the efficiency of wireless spectrum and will ultimately be critical to the successful satisfaction of the burgeoning demand for untethered services. The Commission must avoid sacrificing socially, politically, and educationally important existing services, including over-the-air television broadcasting, in favor of perpetuating existing inefficient unicast wireless network technologies. Unicast technologies will ultimately be unable to meet the growing and seemingly insatiable

¹ CTB filed Comments on June 9 and December 22, 2009, a Reply to Comments on November 13, 2009, and Notices of *Ex Parte* Communications on August 7, 2009, and January 15 and 22, 2010.

demand for both fixed and mobile wireless dissemination of gigabits and gigabytes, if not terabits and terabytes. Carving up the television spectrum, leaving only some for multi-frequency networks, will not create the best of both worlds but rather will impair the efficiency of multi-frequency networks and leave the public with less service in the end.

2. The wireless industry has leapt into this proceeding with a vigorous campaign to acquire an enormous amount of additional spectrum, looking to expand their ability to offer untethered access to the information highway. Many public officials have voiced the increasingly widely held view that virtually unlimited Internet access for every citizen is the key to educational equality and economic opportunity, if not a basic necessity of 21st century life and fundamental citizen's right. At the same time, they point to a declining number of homes relying solely on over-the-air television viewing, noting that Wall Street's higher valuation of wireless spectrum holders than broadcasters confirms that over-the-air television is a decomposing dinosaur.

3. But whatever one's views may be on these assertions,² they are way beside the point. The point is that existing wireless technologies, built on a session-oriented port-to-port architecture, are too inefficient to meet the very demand that their proponents claim will soon choke our communications channels, even if they are fed with ever more spectrum. Moreover, these proponents are asking the FCC to make predictive allocation decisions when the marketplace can do the job more effectively and with more flexibility. And it can all be done

² As the Commission is well aware, commenters have pointed out the importance of broadcasting to informing and educating our free society, as well as ensuring the development of locally relevant content rather than the national content which dominates pay television services like cable and satellite. Moreover, many households which subscribe to cable or satellite service have additional receivers not connected to those services, if for no other reason than avoidance of the extra fees required for additional set-top boxes. Thus tallying cable and satellite households likely understates the number of receivers which rely on over-the-air service.

without sacrificing the benefits of local television broadcasting and can in fact enhance broadcasting by providing a new revenue stream to supplement uncertain future advertising revenues.

4. The efficiency of CTB's technology depends on operating in a multi-frequency environment. That means working with several television broadcast stations in a market and combining those channel resources with innovative "white spaces" technology. If the Commission further truncates the television spectrum, from which it is just finishing the process of removing a large 108 MHz block (Channels 52-69), it risks nipping a new and needed technological advancement in the bud. CTB recognizes that not every single bit of television capacity is currently in use by some stations,³ which makes TV channels a seemingly attractive candidate for compression into a smaller band; but any underutilization is about to end. The CTB technology can and will harness all of the 19.39 Mbps capacity of the ATSC signal; and the greater the amount of broadcast spectrum it uses in a given area, the more efficient and lower cost service it can provide. Moreover, the allocation of that capacity between traditional television and new innovative services will be variable and dynamic, allowing the marketplace to optimize operations not only over months and years but from hour to hour. The more the public demands conventional television programming, including high definition streams, the more capacity television broadcasters will allocate to those services; but if demand turns toward IP

³ There are some notable exceptions, where TV stations are offering as many as eight to twelve video streams and additional audio streams. Examples include KAXT-CA, on RF Channel 42, in San Francisco-San José, California, and WNVN(TV), on RF Channel 30 in Goldvein, VA (Washington, DC DMA).

video and/or Internet services, broadcasters will reallocate their capacity accordingly.⁴ The current non-broadcast services do not and cannot offer this flexibility.

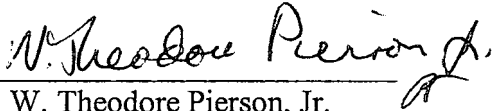
5. Dynamic and flexible spectrum purposing and re-purposing, regulated by public demand, is a far more efficient resource allocator than a government rulemaking proceeding, as history has proven time and time again. Why not let the public decide directly what it needs and wants? Meanwhile, localism will be enhanced through a new revenue source for TV broadcasters, and over-the-air broadcasting should flourish, while a new seriously competitive new broadband pipeline will emerge. With enhanced over-the-air multi-channel television service (which is part of the CTB architecture) and a new broadband pipe, together with preservation of free, over-the-air television, maybe there will finally be a force strong enough to restrain the rapidly escalating prices charged by existing MVPDs, a constant thorn in the Commission's side for the past several years.⁵

6. In looking forward while crafting the National Broadband Plan, the Commission must address not only public demand for service but also next-generation technology, which offers a new level of efficiency and is the best, if not the only, way to meet that demand. Invasion of the

⁴ These reallocation decisions can be made from hour to hour as well as from month to month or year to year. For example, a TV broadcaster might choose to broadcast in HDTV during prime time hours and reduce Internet capacity during those hours, reverting to SDTV and more Internet capacity during other hours or perhaps just overnight.

⁵ It does not matter what the cause is of escalating prices -- MVPD market power, escalating fees demanded by program suppliers (including broadcasters), or anything else. Competitive pressure constrains prices and requires everyone in the economic chain to respond. If this competitive pressure is not generated, and the Commission truncates TV broadcast spectrum, the unfortunate legacy may well be the conversion of television to an all-pay service, burdening lower income citizens and making them spend money they cannot now afford for broadband to buy access to the TV programs they used to get for free.

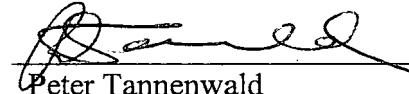
television broadcast spectrum is the wrong path to the ubiquitous wireless broadband service which the FCC seeks to achieve.


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January 27, 2010

Respectfully submitted,


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